(12) UK Patent Application (19) GB (11) 2 307 754 (13) A

(43) Date of A Publication 04.06.1997

(21) Application No 9615171.7

(22) Date of Filing 19.07.1996

(30) Priority Data
(31) 070312444 (32) 30.11.1995 (33) JP

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(51) INT CL[6]
G01R 31/28

(52) UK CL (Edition O)
G1U UR3128

(56) Documents Cited
GB 2136138 A WO 90/04792 A1 US 5363048 A
US 5138266 A

(58) Field of Search
UK CL (Edition O) G1U UR3102 UR3108 UR3128 UR31316
INT CL[6] G01R 31/02 31/08 31/28

(54) Test/reference capacitance ratio used to assess a conductive pattern on a pcb

(57) A method or means of electrically testing a wiring pattern 14 - 17 on a printed circuit board (pcb) 10 comprises taking capacitive measurements between certain points on a reference pcb pattern relative to a conductive plane 13, then taking similar measurements made at respective points on a pattern on a pcb under test. The ratio of the measurements of the pcb under test relative to those of the reference pcb is then calculated and used to assess the acceptability of the pattern on the pcb under test. Measurements considered to relate to a faulty pattern may be excluded from the calculation of said ratio. A pattern considered to be faulty may be tested by the resistance measuring method. Tolerance values may be established for the pattern pass or fail assessment.

FIG.1

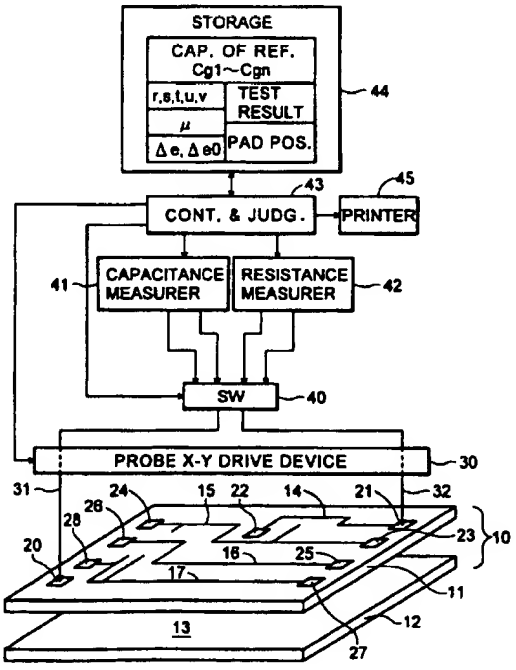

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FIG.1

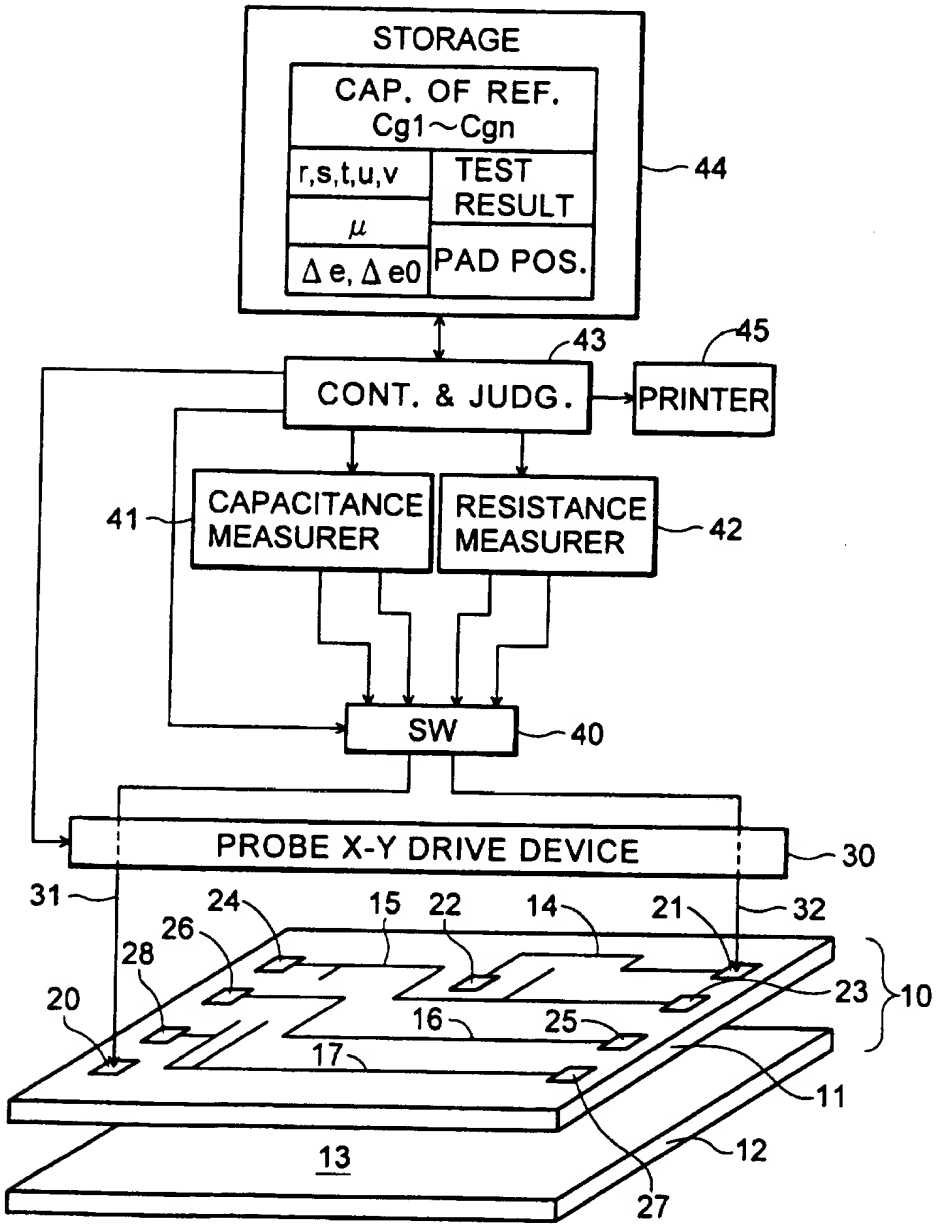

STORAGE
CAP. OF REF.
Cg1~Cgn
r,s,t,u,v
TEST RESULT
μ
Δe, Δe0
PAD POS.
44
43
45
CONT. & JUDG.
PRINTER
41
CAPACITANCE MEASURER
RESISTANCE MEASURER
42
SW
40
PROBE X-Y DRIVE DEVICE
30
31
32
24
15
22
14
21
26
28
20
23
10
16
25
17
11
12
13
27

FIG.2

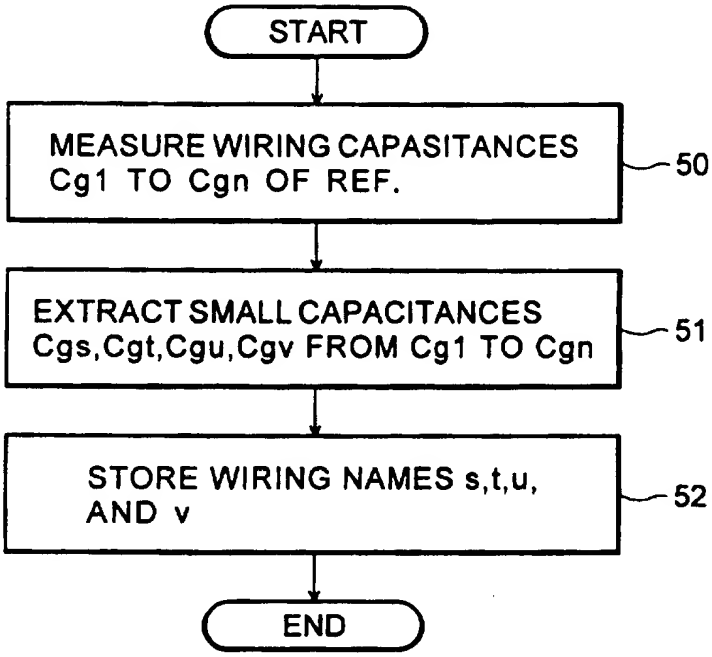
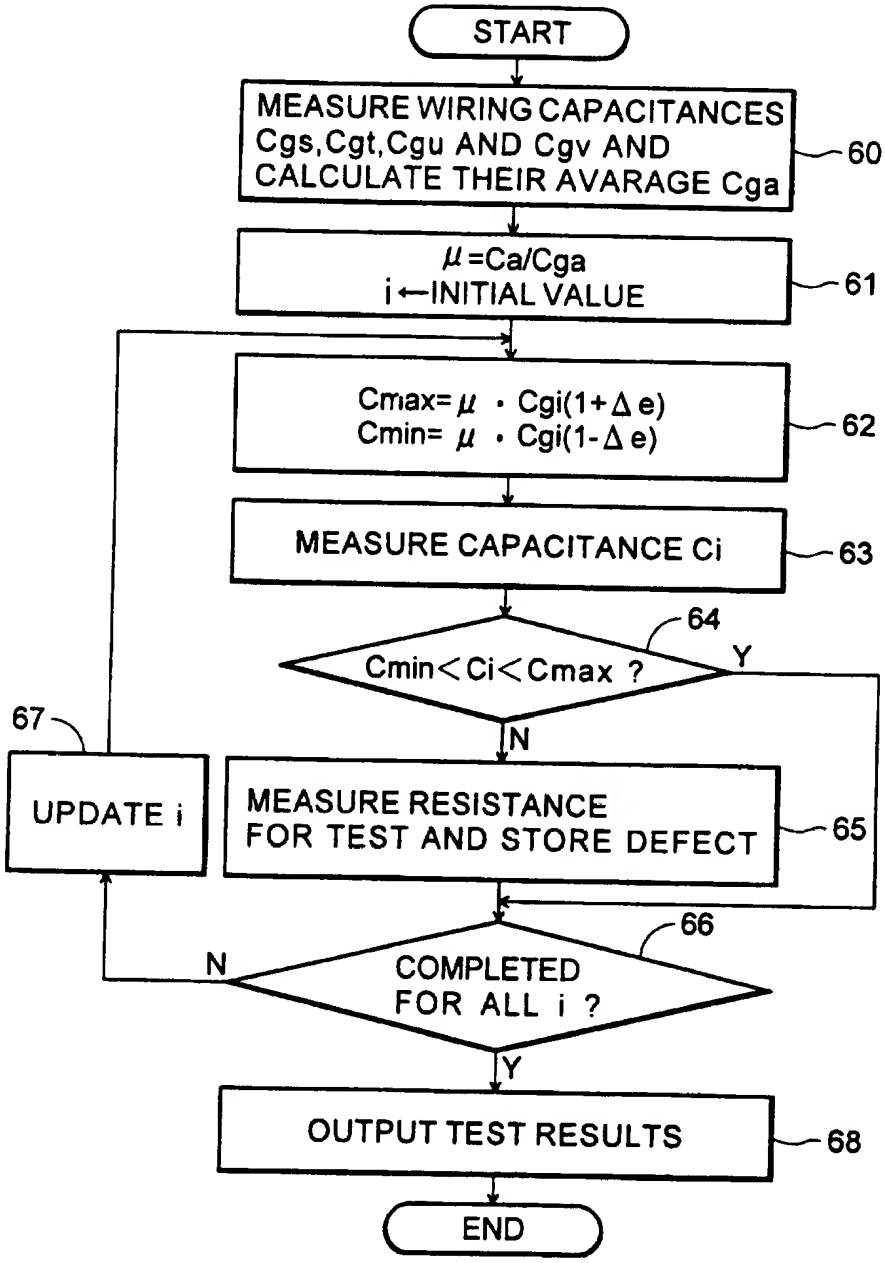

START
MEASURE WIRING CAPASITANCES Cg1 TO Cgn OF REF.
50
EXTRACT SMALL CAPACITANCES Cgs,Cgt,Cgu,Cgv FROM Cg1 TO Cgn
51
STORE WIRING NAMES s,t,u, AND v
52
END

FIG.3


START
MEASURE WIRING CAPACITANCES Cgs,Cgt,Cgu AND Cgv AND CALCULATE THEIR AVARAGE Cga
60
μ=Ca/Cga
i←INITIAL VALUE
61
Cmax=μ・Cgi(1+Δe)
Cmin=μ・Cgi(1-Δe)
62
MEASURE CAPACITANCE Ci
63
64
Cmin<Ci<Cmax ?
Y
N
67
UPDATE i
MEASURE RESISTANCE FOR TEST AND STORE DEFECT
65
66
N
COMPLETED FOR ALL i ?
Y
OUTPUT TEST RESULTS
68
END

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METHOD OF AND APPARATUS FOR ELECTRICAL WIRING-PATTERN TEST

The present invention relates to a method of and an